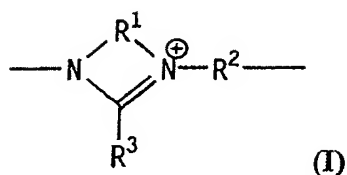


New Claims:

1. A cationic polymer comprising cyclic nonaromatic units which contain an amidinium group, with the
5 cyclic nonaromatic units which contain an amidinium group being located in the main chain of the polymer, wherein the cyclic nonaromatic units which contain an amidinium group are linked to the main chain of the polymer via the two N atoms.
10
2. A cationic polymer as claimed in claim 1, wherein the cyclic nonaromatic units which contain an amidinium group are substituted or unsubstituted
15 5-, 6- or 7-membered rings or combinations of these.
3. A cationic polymer as claimed in claim 2, wherein the cyclic nonaromatic units which contain an amidinium group are selected from among
20 substituted and unsubstituted imidazolinium, tetrahydropyrimidinium and tetrahydro-1,3-diazepinium groups and combinations thereof.
4. A cationic polymer as claimed in claim 1 or 2
25 which comprises the following structural unit in the main chain:



where R^1 is $-(CH_2)_n-$ where $n = 2, 3$ or 4 ;

R^2 is $-(CH_2)_m-$ where $0 < m < 22$, $-CH=CH-CH_2-$,
 5 $-CH=CH-CH_2-CH_2-$, $-CH=CH-$, $-CH=CH-CH=CH-$, a
 monocyclic or polycyclic arylene radical or a
 divalent polyether radical of the structure
 $-(CH_2)_k-(O-(CH_2)_k)_p-$ where $0 < k < 22$ and $0 < p < 100$, in particular $R^2 = R^1$; and

10 R^3 is $-(CH_2)_l-CH_3$ where $0 < l < 21$ or a monocyclic
 or polycyclic aryl radical.

- 15 5. A cationic polymer as claimed in claim 4, wherein
 $n = 2$ and $R^2 = R^1$ and the cationic polymer is
 prepared from essentially linear polyethylenamine.
- 20 6. A cationic polymer as claimed in any of claims 1
 to 5 containing counterions selected from the
 group consisting of halide, phosphate,
 halophosphates, alkyl phosphates, nitrate,
 sulfate, hydrogensulfate, alkyl sulfates, aryl
 sulfates, perfluorinated alkyl and aryl sulfates,
 sulfonate, alkylsulfonates, arylsulfonates,
 25 perfluorinated alkylsulfonates and arylsulfonates,
 perchlorate, tetrachloroaluminate, tetrafluoro-
 borate, alkyl borates, tosylate, saccharinate,
 alkyl carboxylates, bis(perfluoroalkylsulfonyl)-
 amide anions and mixtures thereof.
- 30 7. A cationic polymer as claimed in claim 6 in which
 the counterion is iodide.

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8. A cationic polymer as claimed in any of claims 1 to 5 which contains counterions suitable for producing liquid-crystalline states.
- 5 9. A process for preparing a cationic polymer as claimed in claim 4 in which $R^1 = R^2 = -CH_2-CH_2-$ and R^3 is as defined in claim 5 by reacting a predominantly linear polyethylenamine with an ortho ester in the presence of an ammonium salt
10 which contains a weakly nucleophilic anion.
10. The use of a cationic polymer as claimed in any of claims 1 to 8 as polyelectrolyte in batteries or solar cells.
15
11. The use of a cationic polymer as claimed in any of claims 1 to 8 as additive for polymers.
12. The use of a cationic polymer as claimed in any of
20 claims 1 to 8 in optical components.